

number of English and American mining engineers who will appreciate a good dictionary of mining terms, and certainly the author has spared no pains to make his dictionary as complete as possible. He has diligently studied the Spanish literature of mining and metallurgy, and his long residence in Mexico and in the United States of Colombia has enabled him to include a very full list of the terms used in these republics. Some Portuguese and Brazilian terms are also added.

It is curious to note that many terms have different meanings in different districts of South America. Thus, the well-known term *Caliche*, applied in Chile and Peru to the impure native nitrate of soda which is mined on a vast scale, denotes in the Uco district of Peru a thin layer of clayey soil capping auriferous veins, in Mexico felspar, and in Antioquia, Colombia, a recently-discovered mineral vein. It is probable that with the development of railway intercommunication many of these terminological differences will disappear, and that the most convenient terms will survive. In all cases the locality where a particular term is in use is noted by the author, and the authority is duly recorded. Small sketches, seventy-six in number, are added when necessary to elucidate a definition. The whole work has been compiled with scrupulous accuracy, and deserves unstinted praise. It is perhaps to be regretted that an English index to the Spanish terms has not been included in the scheme of the work.

Immanuel Kants Metaphysik der Sitten. Herausgegeben von Karl Vorländer. Price 4.60 marks.

Kirchners Wörterbuch der philosophischen Grundbegriffe. Neubearbeitung von Dr. Carl Michaëlis. Price 8 marks.

B. de Spinoza's kurzgefasste Abhandlung von Gott, dem Menschen und dessen Glück. Übersetzt von C. Schaarschmidt.

G. W. F. Hegel's Phänomenologie des Geistes. Jubiläumsausgabe. Herausgegeben von Georg Lasson. Price 5 marks. (Leipzig: Durr'schen Buchhandlung, 1907.)

The first three of these volumes are new editions of works that have been reprinted at various times in the "Philosophische Bibliothek," a series which does for the German student of philosophy what Ostwald's well-known "Klassiker der exakten Wissenschaften" do for the German student of the sciences. Hegel's famous treatise has been added to the series in celebration of the centenary of its original publication in 1807.

The books are admirably printed, and are provided with excellent introductions, often by men of first-rate authority. Many of them are, in addition, briefly but helpfully annotated, while most are equipped with a useful index. More conspicuously moderate in price even than Ostwald's reprints, these wonderful volumes, by their very existence, render almost unthinkable any English series comparable with them in scope and importance.

The Spectroscope: its Uses in General Analytical Chemistry. By T. Thorne Baker. Pp. viii+130. (London: Baillière, Tindall and Cox, 1907.)

This volume contains a fair amount of information useful to those wishing to purchase and set up spectroscopic apparatus for chemical research, but it seems to us to be ill-assorted and indifferently arranged. The author plunges straightway into the elementary mathematics of the prism and plane and concave gratings, and then describes the various parts of spectroscopes; yet on p. 78 it is thought necessary to inform the reader that a 12-inch focus telescope lens

will give a much shorter spectrum than an 18-inch focus lens. There are, however, in the various discourses on adjustments, refractive indices, resolving power, the methods of producing radiation, sensitive plates, &c., numerous hints which will be found useful by those who have only a general knowledge of physics and wish to take up spectroscopy. It is for such readers that the book is intended. The notes on "series" and the Zeeman effect would probably be better left to the more advanced works on spectroscopy. There are a few uncorrected misspellings and one or two curious terms, which suggest that the author's acquaintance with real, practical laboratory work has been either too brief or too restricted. The astrophysical side of the subject is not dealt with at all, the idea being to restrict the book entirely to the chemical side.

W. E. R.

Der Bedeutung der Reinkultur. Eine Literaturstudie.

By Dr. Oswald Richter. Pp. viii+128. (Berlin: Gebrüder Borntraeger, 1907.) Price 4.40 marks.

This essay, with true German thoroughness, gives a very complete, though necessarily brief, survey of the various microscopic organisms that have been obtained in pure cultivation. The organisms are dealt with in groups (and not individually), partly according to their biological position, partly according to the changes they produce. The green and blue algæ and diatoms are first considered, then the bacteria—the nitrifying forms, cellulose fermenters, sulphur bacteria, &c.—and lastly the yeasts and protozoa. In the final portion of the book the subjects of pleomorphism and systematic position of these organisms are discussed. The bibliography is a very full one, and it is probable that this part of the compilation will be most appreciated.

R. T. H.

LETTERS TO THE EDITOR.

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The Coloration of Birds' Eggs.

IN NATURE of May 14 Mr. R. L. Leslie asks if it is known how and why birds' eggs become coloured, and whether they illustrate Mendelian phenomena.

Something is known as to the nature of the pigments from which the colours are derived. The late Dr. H. C. Sorby in 1875 investigated their origin by means of the spectrum analysis. He discovered seven substances in the pigments accounting for every form of coloration. These substances are oorhodeine (red), oocyan, banded oocyan (blue), yellow ooxanthine, rufous ooxanthine (yellow and reddish-yellow), a sixth substance of a brown tint, and lichenoxanthine, found in many plants, lichens, and fungi, and perhaps due to microscopic fungi. According to older theories, the pigments were secretions from the blood and bile, and in the case of the first three Sorby was disposed to agree (*cf.* the origin of pigments in coloration of molluscan shell). The ground-colour is laid on the shell just before the extrusion of the egg, and in eggs not of a purely uniform colour the markings are then superposed, being originally rounded, but by movement of the bird they become blurred and blotched. The intensity of coloration varies with age up to a certain point. Eggs of young birds are often unspotted. No doubt absence of markings is due to deficiency of pigmentation. The last egg or eggs of a second brood, in fact, often lack normal coloration or markings. Age and health thus control coloration, which is brilliant in a healthy but indistinct in an unhealthy bird's egg. Whether albino birds lay eggs differing from those of birds typical in every way has not been noticed apparently.

Little is known definitely as to why eggs are coloured.